

Computers and Internet  
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Welcome to the first of a new quarterly column in CQ, dealing with Computers, the Internet, and how these relate to Amateur Radio. This is a new idea for a regular column, and the waters ahead are uncharted, so I'd like to invite each of you to write and let me know what you might enjoy seeing here, because it is ultimately up to you, the reader, to determine if we have succeeded or failed in providing what you want. I look forward to hearing from each of you.

To those 30,000 or so folks who used to read CQ-VHF, my name is (I hope!) familiar, but to the majority of readers, my name and call are new, so a brief introduction is called for. I got my Novice ticket in 1987, upgraded to Technician in 1988, and became a Tech Plus by default in the 90's. Since I got my Novice, I've been very involved in digital communications. My first piece of amateur equipment was an AEA PK-232, which I used on 10m HF packet at 300 baud (on a Heathkit SB-102!)- that was the only activity I could get into, since I hadn't upgraded to Tech yet. Since the FCC changed the license classes late last year, I've collected the CSCEs for Extra.

More recently, I've been involved with the Radio Amateur Telecommunications Society (RATS), the ROSE folks (remember ROSE?), as well as the North East Digital Association (NEDA). I also wrote a digital communications column for CQ-VHF, as well as articles for a number of ARRL/TAPR Digital Communications Conferences. Professionally, I'm an Electronics Engineer for a major automobile importer. My interests revolve around electronics and computers, especially design and construction, but I enjoy working on and around my house, and spending time with my family. For my first article in CQ, let's take a look at building a web site.

Most of us have a computer in our shack, whether for contest logging or just surfing the web. Of course, if you don't have a computer, there won't be much of interest in this particular article, but I plan on fixing your dilemma in an upcoming column, so stay tuned.

Most of the larger Internet Service providers (ISPs), and many smaller ones, provide some disk space on their server for a personal web page. Since each ISP uses a slightly different upload procedure, you'll need to ask them how to get your files onto their server. Nevertheless, I can give you some tips on creating a web site (a bunch of web pages), what kinds of information you might want to put there, and some of the finer points of web page design. If you're not sure if web page hosting is part of your access package, just ask your ISP. If you have Internet access, Yahoo! offers free web space.

The first thing to consider is why in the world you should even put up a web site. The best reason is that a web page is by far the easiest and cheapest way to transfer information. If you run a small business, or even just a hobby service, here's a place you can get publicity and dispense information for nearly free. Maybe you know a lot about hardline connectors, and want to share your experience? How about those photos of when you put up your tower, or last year's Field Day? You are only limited by your imagination.

The first step is to collect information you might have already and convert it to a standard web page format. The next step is to create a *home page* to link those pages together, like an index.

The standard format for web pages is HTML, an abbreviation for *HyperText Mark-up Language*. We use this pure-text format so that anyone, regardless of computer or browser type, can see it. Nearly every modern word processor, such as Word or WordPerfect, can convert a document into HTML. If you run Windows 95 or 98, you probably have a version of FrontPage, which is easy to use (but a little limited in features). You can also get freeware and shareware HTML editors on the web - just understand that you sometimes get what you pay for.

If all this sounds strange right now, don't worry - you're in good company. I'll never be able to give you all of the intricate details - that would take a few books - but the basics will help you understand the concepts involved, and the rest can be found on the web itself, as well in a multitude of books on the subject.

The process of building a web site is actually quite simple: First you create a main index page, which we call the *Home Page*. Then, you create any number of *Daughter Pages*, which is where the information resides, and create clickable links to them on the Home Page.

The most important concept is that of clickable links, or *Hyperlinks*. Anyone, using any combination of browser and computer, just clicks on the hyperlink, and the page defined by the web page designer (you!) is shown on the screen. Hyperlinks are extremely powerful. Having the ability to link to any other file, whether on your own web site or any other site on the Internet, means that you never have to duplicate any information that's already posted somewhere - you just provide a link to it! Hyperlinks also make it very easy for the user to jump to another page. They are kind of like footnotes, in that you can jump out of a document for a moment, read something else, then jump right back to where you were.

The Web is also an excellent way to look at pictures and drawings - *Graphics*. You can even make a graphic into a hyperlink, so that when someone clicks on the picture (or a

smaller part of it - a *Hot Spot*), they are linked to another file. Remember, that file can be another web page, a graphic, a program - *any* file!

Now, some pointers on web page design:

The best source for formatting tips is to look around the web. When you see a page you think looks good, save it to your hard disk, and edit it to erase the old text and add your own. This kind of *format borrowing* is almost always OK, as long as you replace all of the existing text, and avoid using copyrighted graphics or text. Remember, *everything* is copyrighted, so don't use anyone else's graphics, text, or other files.

Since graphics take much longer to download to the user than text, keep graphics small (under 20 kB), and use as few as possible. It is good practice to locate graphics at least one screen height below the top of the page, so the user sees the text appear almost instantly and has something to read while the graphic downloads. This makes your pages appear to load faster. Avoid the unnecessary use of graphics, as they just clutter the page.

Graphics can be saved in two web-compatible formats: JPEG and GIF. JPEG format is best for photographs, while GIF format is best for drawings. Play with these two formats and see what happens. If a graphic just cannot be shrunk below 20 kB, make a *Thumbnail* (a very tiny copy of the image), place it on your page, and use it to link to the larger version. Also, remember that a 256 color image (with "dithered" color palette) looks just as good as a true color image, at 1/3 the file size.

Text should be black, and backgrounds should be white or another light color, but not yellow, which is hard on the eyes. Remember that different browsers might see your page differently, so wild color schemes might make the page unreadable.

Good home pages are small, ideally only one or two screens high. They shouldn't be just links to other people's sites, put your own ideas (*Content*) up instead. Be sure to organize your site logically, like an index to a book, or like the folders and subfolders of files on your computer. Be creative, have lots of depth to your content, let your personality show through. Don't write for the sake of writing - keep it short, cut to the chase. Just don't slice long documents into tiny pieces - it makes it difficult to print, and annoys the reader.

Oh, yes: Every page should have a hyperlink, either at the bottom or the top, to get you back to the last page viewed, and the home page. These navigation aids really make a site easier to use. It's also good practice to put your name, and the date the page was last changed, in tiny text at the bottom of each page.

Your best source of information about web pages, including design, content, technical information (such as the details on HTML, a fascinating formatting language that uses only plain ASCII text) is, of course, the web itself. The resources section offers a few of

the better sites I've seen, but there are literally thousands more. A visit to your local library or bookstore will yield even more information on the topic. I encourage you to give it a try - who knows what it might lead to?

73, N2IRZ

Captions:

Figure 1: The WebWizard home page. Web Wizard is a useful tool for authoring documents in HTML directly. It is a simple package which prepares a home page after a question-and-answer session with the user, and one of the few available for both 16-bit and 32-bit Windows platforms. WebWizard is available from <<http://www.halcyon.com/artamedia/webwizard/>>



Figure 2: The world-famous CQ web site, a good example of a home page. Note that all the information fits on a single screen, with a few links on the left and some interesting graphic-based links towards the center. The graphics are small, loading quickly, and they don't overwhelm the page. If you didn't already know, visit us at <<http://www.cq-amateur-radio.com>>



#### Resources:

One of the best listings of web resources is found at <http://www.netspace.org/~dwb/www-authoring.html>. Some of the links are outdated, as explained on the home page, but the ones that work are great.

A great Introduction to HTML is found at <http://www.cwru.edu/help/introHTML/toc.html>. This is a comprehensive guide to the HTML language. Remember, as a pure-text language, you can write HTML using any simple ASCII text editor - but you might want to use an HTML editor to maintain your sanity.

A useful and very, um, insistent guide to web page design is found at <http://www.mcs.net/~jorn/html/terrorist.html>. Jorn, AKA the HyperTerrorist, has put together a really comprehensive guide to what makes good and bad web pages, and tells the story with a bit of humor. Also at this site is a checklist for good page design: <http://www.mcs.net/~jorn/html/net/checklist.html>.

Finally, a search for related topics on any of the web search engines will yield a bounty of links.